



MATERIAL SAFETY DATA SHEET

PRODUCT

GI717 ACIDIC PH ADJUSTOR

Emergency Telephone Number

Medical (800) 462-5378 (24 hours)

(800) I-M-ALERT

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Phosphoric acid - Corrosive

Phosphoric acid = TWA 1 mg/m³, STEL 3 mg/m³ ACGIH/TLV

Phosphoric acid = TWA 1 mg/m³, STEL 3 mg/m³ OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

This product contains phosphoric acid, a Reportable Quantity (RQ) substance and if 6,700 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS
(40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

After October 17, 1989, MSDS(s), or a list of product names for all hazardous substances between zero (0) and 10,000 pounds, not previously reported, must be submitted.



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product contains the following ingredient(s), (with CAS # and % range)
which appear(s) on the List of Toxic Chemicals.

Phosphoric acid 7664-38-2 40+

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List
(40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
If this product becomes a waste, it does meet the criteria of a
hazardous waste as defined under RCRA 40 CFR 261 (consult Section 11).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/
formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
This product contains the following ingredient covered by the Clean Water Act:

Phosphoric acid - Section 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments),
Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
None of the chemicals on the current Proposition 65 list are known to be
present in this product.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical
Materials Register.

STATE RIGHT TO KNOW LAWS:
Regulated in those states using the TLV for phosphoric acid as a criteria for
listing.

SECTION 15 ADDITIONAL INFORMATION

None



MATERIAL SAFETY DATA SHEET

PRODUCT

GI717 ACIDIC PH ADJUSTOR

Emergency Telephone Number

Medical (800) 462-5378 (24 hours)

(800) I-M-ALERT

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Adnur, M. O., eds., Macmillan Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.



MATERIAL SAFETY DATA SHEET

PRODUCT

GI717 ACIDIC PH ADJUSTOR

Emergency Telephone Number

Medical (800) 462-5378 (24 hours)

(800) I-M-ALERT

SECTION 17 BIBLIOGRAPHY

(CONTINUED)

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 10/19/89
DATE PRINTED: 04/19/94

PAGE 8 OF 8



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: ACTI-BROM 7342 CHLORINE AID

DESCRIPTION: An aqueous solution of bromide salt and an oxyalkylate

NFPA 704M/HMIS RATING 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Sodium bromide	7647-15-6	42.8

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: Harmful if swallowed. Causes moderate eye irritation. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause mild to moderate irritation.
SKIN CONTACT: May cause irritation with prolonged contact.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product along with acute toxicity studies on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):

Similar product LD50 = Greater than 5,000 mg/kg

COMMENTS: During the 14-day period following the dosing of 5,000 mg/kg to the rats, the clinical observations included ataxia, lethargy, decreased limb tone, low carriage, and anogenital staining.

ACUTE DERMAL TOXICITY (ALBINO RABBITS):

Similar product LD50 = Greater than 2,000 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS): Similar product

SKIN IRRITATION INDEX DRAIZE RATING: 0.0/8.0 Non-irritating

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS): Similar product

EYE IRRITATION INDEX DRAIZE RATING: 16.0/110.0 (1-hour) Moderately irritating

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 10.8/110.0 Minimally irritating

COMMENTS: No corneal opacity was noted. Iridial irritation which cleared three days after contact was noted. Slight to moderate conjunctivitis which cleared 7 days after contact was also noted. Results suggest transient irritation.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Colorless

FORM: Liquid

ODOR: None

DENSITY:

12.2 lbs/gal.

SOLUBILITY IN WATER:

Completely

SPECIFIC GRAVITY:

1.46 @ 60 Degrees F

ASTM D-1298

pH (NEAT) =

7.1

ASTM E-70

VISCOSITY:

5 cps @ 72 Degrees F

ASTM D-2983

FREEZE POINT:

16 Degrees F

ASTM D-1177

FLASH POINT:

None (FMCC)

ASTM D-93



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

(CONTINUED)

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Reducing agent. Do not mix this pesticide with acids or other oxidizing chemicals. Mixing with acids or oxidizing chemicals may cause evolution of hydrogen bromide gas, which is poisonous and corrosive.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant vapors, mists or aerosols are generated, wear a NIOSH approved or equivalent respirator.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed).

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

METAL CONTAINERS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

PLASTIC CONTAINERS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

SECTION 12 ENVIRONMENTAL INFORMATION

CHEMICAL OXYGEN DEMAND (COD): 53,000 mg/L

TOTAL ORGANIC CARBON (TOC): 2,000 mg/L

AQUATIC DATA:

PRODUCT DATA:

96 hour static acute LC50 to Bluegill Sunfish = Greater than 1,000 ppm

96 hour no observed effect concentration is 1,000 ppm based on no mortality or abnormal effects.

96 hour static acute LC50 to Rainbow Trout = Greater than 1,000 ppm

96 hour no observed effect concentration is 1,000 ppm based on no mortality or abnormal effects.

SODIUM BROMIDE DATA:



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 12 ENVIRONMENTAL INFORMATION

(CONTINUED)

96 hour static acute LC50 to Fathead Minnow = 16,479 ppm
96 hour static acute LC50 to Poecilia reticulata = 225 ppm
48 hour static acute LC50 to Daphnia magna = 7,900 ppm

HYPOBROMOUS ACID DATA: (acid generated from product)

96 hour flow-through acute LC50 to Fathead Minnow = 0.079 ppm (as Br2)
48 hour flow-through acute LC50 to Daphnia magna = 0.038 ppm (as Br2)

HYPOBROMOUS ACID DATA: (acid generated from Sodium Bromide)

96 hour static acute LC50 to Bluegill Sunfish = 0.52 ppm (as Br2)
96 hour no observed effect concentration is 0.30 ppm based on no mortality.

96 hour static acute LC50 to Rainbow Trout = 0.23 ppm (as Br2)

96 hour flow-through acute LC50 to Fathead Minnow = 0.097 ppm (as Br2)

96 hour flow-through acute LC50 to Sheepshead Minnow = 0.19 ppm (as Br2)
96 hour no observed effect concentration is 0.08 ppm based on no mortality.

48 hour static acute LC50 to Daphnia magna = 0.71 ppm (as Br2)
48 hour no observed effect concentration is 0.41 ppm based on no mortality.

48 hour flow-through acute LC50 to Daphnia magna = 0.038 ppm (as Br2)

96 hour flow-through acute EC50 to Eastern Oysters = 0.54 ppm (as Br2)
96 hour flow-through acute LC50 to Mysid Shrimp = 0.17 ppm (as Br2)

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED
DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

Sodium bromide - Eye irritant

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA):

EPA Reg. No. 1706-168.

This product is registered for use as a microorganism control chemical used in industrial recirculating cooling water tower systems. In all cases follow instructions on the product label.

This product has been certified as KOSHER/PAREVE for year-round use EXCEPT FOR THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:

None of the ingredients are specifically listed.



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

This product is regulated under FIFRA and is exempt from State Right to Know Laws.

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J.,



MATERIAL SAFETY DATA SHEET

PRODUCT

ACTI-BROM 7342 CHLORINE AID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 17 BIBLIOGRAPHY

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Klaassen, C. D., and Admur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

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IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, CH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, CH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 06/16/92

DATE PRINTED: 08/12/93



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 8363 CORROSION INHIBITOR

DESCRIPTION: An aqueous solution of a phosphono carboxylate and phosphonate and sodium hydroxide

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation of the ingredient(s) under OSHA's Hazard Communication Rule, 29 CFR 1910.1200 has found none of the ingredient(s) hazardous.

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause minimal irritation.
SKIN CONTACT: Can cause mild irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):

COMMENTS: With a single dose of 5,000 mg/kg nine of the ten animals died within 24-hours.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 1.7/8.0 Mildly irritating

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 1.0/110.0 Minimally irritating at 24-hours

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR:	Clear amber	FORM:	Liquid	
DENSITY:			10.7 lbs/gal.	
SOLUBILITY IN WATER:			Completely	
SPECIFIC GRAVITY:			1.28 @ 75 Degrees F	ASTM D-1298
pH (NEAT) =			11	ASTM E-70
VISCOSITY:			12 cps @ 75 Degrees F	ASTM D-2983
FREEZE POINT:			18 Degrees F	ASTM D-1177
BOILING POINT:			210 Degrees F @ 760 mm Hg	ASTM D-86
FLASH POINT:			None (FMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (FMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates)

MATERIAL SAFETY DATA SHEET



PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 9 REACTIVITY INFORMATION

(CONTINUED)

which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂ may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respiratory with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed).

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

(RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED
DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, none of the ingredients in this product are hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients on the List of Toxic Chemicals.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D: Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Organophosphonate
Substituted carboxylate
Water

Trade secret
Trade secret
7732-18-5

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.

SECTION 15 ADDITIONAL INFORMATION

Nalco internal number F08575

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 16 USER'S RESPONSIBILITY

(CONTINUED)

information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

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THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8363 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 17 BIBLIOGRAPHY

(CONTINUED)

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 11/09/92

DATE PRINTED: 08/12/93

PAGE 7 OF 7



MATERIAL SAFETY DATA SHEET

PRODUCT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALSPERSE 7308 DISPERSANT

DESCRIPTION: An aqueous solution of polyglycol and ethoxylated nonylphenol

NFPA 704M/HMIS RATING: 2/2 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Ethoxylated nonylphenol	9016-45-9	40+

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes irritation to skin and eyes. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause moderate irritation.

SKIN CONTACT: Can cause mild irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):

Ethyoxylated nonylphenol LD50 = 3,000 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):

Ethyoxylated nonylphenol LD50 = Greater than 3,000 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING:

2.4/8.0 Ethyoxylated nonylphenol

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING:

35.5/110.0 Ethyoxylated nonylphenol

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear

DENSITY:

SOLUBILITY IN WATER:

SPECIFIC GRAVITY:

pH (NEAT) =

VISCOSITY:

FREEZE POINT:

POUR POINT:

BOILING POINT:

FLASH POINT:

FORM: Liquid

8.66 lbs/gal.

Completely

1.04 @ 60 Degrees F

6.0

700 cps @ 60 Degrees F

None

Less than 10 Degrees F

210 Degrees F @ 760 mm Hg

None (FMCC)

ODOR: Sweet

ASTM D-1298

ASTM E-70

ASTM D-2983

ASTM D-1177

ASTM D-97

ASTM D-86

ASTM D-93



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

(CONTINUED)

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: None

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: None known

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂ may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

CHEMICAL OXYGEN DEMAND (COD): 1,700,000 mg/L

TOTAL ORGANIC CARBON (TOC): 520,000 mg/L

AQUATIC DATA:

Results below are based on the product.

96-hour static acute LC50 to Bluegill Sunfish = 16 mg/L

96 hour no observed effect concentration is 6.2 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Moderately toxic

96-hour static acute LC50 to Rainbow Trout = 14 mg/L

96 hour no observed effect concentration is 5.0 mg/L based on no mortality or abnormal effects.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 12 ENVIRONMENTAL INFORMATION

(CONTINUED)

TOXICITY RATING: Moderately toxic

48-hour static acute LC50 to *Daphnia magna* = 70 mg/L

48 hour no observed effect concentration is 32 mg/L based on no mortality or abnormal effects.

TOXICITY RATING: Moderately toxic

96 hour static acute LC50 to Fathead Minnow = 5.6 mg/L

TOXICITY RATING: Toxic

48 hour static acute LC50 to *Ceriodaphnia dubia* = 12.5 mg/L

TOXICITY RATING: Moderately toxic

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED
DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Ethoxylated nonylphenol - Eye irritant

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

U. S. DEPARTMENT OF AGRICULTURE (USDA):
USDA Inspection and Grading Programs - Food Safety and Inspection Service:
This product is authorized by USDA for use in federally inspected meat and poultry plants. Authorized use is under category G7.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15
(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

STATE RIGHT TO KNOW LAWS:

This product does not contain ingredients listed by State Right To Know Laws.

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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MATERIAL SAFETY DATA SHEET

PRODUCT

NALSPERSE 7308 DISPERSANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 17 BIBLIOGRAPHY

(CONTINUED)

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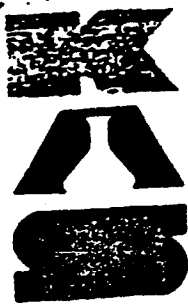
PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 05/13/92

DATE PRINTED: 08/12/93

DIS. BUTED BY CHOU CHEMICAL COMPANY

K.A. STEEL CHEMICALS INC.



MATERIAL SAFETY DATA SHEET

SEC 1 PRODUCT IDENTIFICATION

PRODUCT NAME:
SODIUM HYPOCHLORITE SOLUTION

EFFECTIVE DATE:
March 1, 1992

CAS NUMBER:
7681-52-9

CHEMICAL FORMULA:
NaOCL (SOLUTION)

CHEMICAL NAME:
SODIUM HYPOCHLORITE (AQUEOUS SOLUTION)

MOLECULAR WEIGHT
74.44

EMERGENCY TELEPHONE NUMBERS

LEMONT, ILLINOIS

1-708-257-3900

SEC 2 PHYSICAL DATA

APPEARANCE:
CLEAR to YELLOW LIQUID

PH OF SOLUTIONS:
APPROX. 12

ODOR:
PUNGENT, IRRITATING, THAT OF HOUSEHOLD BLEACH.

SOLUBILITY:
COMPLETE

BOILING POINT:
DECOMPOSES PRIOR TO BOILING

SPECIFIC GRAVITY:
1.0890 @ 6.0% BY VOLUME @ 68°F
1.2180 @ 15.5% BY VOLUME @ 68°F

VAPOR PRESSURE:
APPROX. THAT OF AIR

EVAPORATION RATE:
NOT APPLICABLE

FIRE:
NOT CONSIDERED TO BE A FIRE HAZARD.

EXPLOSION:
NOT CONSIDERED AN EXPLOSION HAZARD.

FIRE EXTINGUISHING MEDIA:
USE ANY MEANS SUITABLE FOR EXTINGUISHING SURROUNDING FIRE.

SPECIAL INFORMATION:
WEAR FULLY ENCAPSULATED SUITS WITH SELF-CONTAINED BREATHING APPARATUS
(POSITIVE PRESSURE)

SEC 4 REACTIVITY DATA:

STABILITY:
STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE. UNSTABLE AT
ELEVATED TEMPERATURES.

HAZARDOUS DECOMPOSITION PRODUCTS:
DECOMPOSES UNDER VARIOUS MECHANISMS. MAY GENERATE CHLORINE OR OXYGEN
WHICH MAY BE TOXIC AND EXPLOSIVE, RESPECTIVELY.

HAZARDOUS POLYMERIZATION:
THIS SUBSTANCE DOES NOT POLYMERIZE.

INCOMPATIBILITIES (MATERIALS TO AVOID):
REACTS VIGOROUSLY WITH AMINE, AMMONIUM SALTS, REDUCING AGENTS, METHANOL,
ACIDS AND MOST ORGANICS.

SEC 5 LEAK/SPILL DISPOSAL INFORMATION

RELEASES/SPILLS:
MOVE UNPROTECTED PERSONNEL UPWIND OUT OF DANGER.
REPORTABLE QUANTITY (RQ) (CWA:CERCLA): 100 LBS 45.4 Kg.

DISPOSAL:
DILUTE WITH WATER AND FLUSH TO LOCAL SEWER SYSTEM, IF PERMITTED. SOLID WASTE
MUST BE DISPOSED OF IN A PERMITTED WASTE MANAGEMENT FACILITY. ENSURE
COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SEC 6 HEALTH HAZARD INFORMATION

A. EXPOSURE/HEALTH EFFECTS

ACUTE:
INHALATION: INHALATION OF MIST OR FUMES CAN CAUSE BRONCHIAL IRRITATION,
COUGH, DIFFICULT BREATHING, INFLAMATION OF THE MOUTH, NAUSEA, AND IN SEVERE
EXPOSURES, PULMONARY EDEMA. MATERIAL HAS ODOR OF CHLORINE.

EYE/SKIN: LIQUID CONTACT CAN PRODUCE IRRITATION OF THE SKIN WITH BLISTERING AND
ECZEMA. DIRECT CONTACT WITH EYES MAY CAUSE REDNESS, PAIN AND IN THE CASE OF
CONCENTRATED HYPOCHLORITE (15%), PERMANENT DAMAGE.

INGESTION: INGESTION OF A FEW OUNCES CAN CAUSE CORROSION OF MUCOUS
MEMBRANES, SWELLING OF THE THROAT, PERFORATION OF THE ESOPHAGUS AND
STOMACH, VOMITING, COLITIS, HYPOTENSION AND CIRCULATORY COLLAPSE. MAY LEAD
TO CONVULSIONS, COMA OR DEATH. AT 15% CONCENTRATIONS, AS LITTLE AS 1 OUNCE
MAY BE LETHAL.

CHRONIC EXPOSURE:
NO DATA FOUND

CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN:
NTP - NO; IARC - NO; OSHA - NO

B. EMERGENCY/FIRST AID

INGESTION:

DO NOT INDUCE VOMITING! GIVE LARGE QUANTITIES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONCIOUS PERSON. TAKE IMMEDIATELY TO A HOSPITAL OR PHYSICIAN.

INHALATION:

MOVE PERSON TO FRESH AIR AT ONCE. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN AND CALL A PHYSICIAN. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.

EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 20 MINUTES. IN CASE OF SKIN CONTACT - IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER. REMOVE ANY CONTAMINATED CLOTHING. IF IRRITATION OCCURS, CONSULT A PHYSICIAN.

NOTES TO PHYSICIAN (INCLUDING ANTIDOTES):

DO NOT ADMINISTER ACIDIC ANTIDOTES OR SODIUM BICARBONATE FOLLOWING SODIUM HYPOCHLORITE OVEREXPOSURE. AN OUNCE OF 1% SODIUM THIOSULFATE OR MILK OF MAGNESIA IS HELPFUL.

SEC 7 OCCUPATIONAL CONTROL MEASURES

OSHA PERMISSIBLE EXPOSURE LIMIT:
NOT ESTABLISHED

VENTILATION SYSTEM:
LOCAL EXHAUST

PERSONAL RESPIRATORS: (NIOSH APPROVED)
RECOMMENDED FOR ALL PERSONNEL WORKING IN OR ABOUT AN AREA OF POTENTIAL EXPOSURE.

SKIN PROTECTION:
WEAR IMPERVIOUS PROTECTIVE RUBBER CLOTHING; INCLUDING BOOTS; GLOVES; LAB COAT; APRON OR COVERALLS TO PREVENT SKIN CONTACT.

EYE PROTECTION:
USE CHEMICAL SAFETY GOGGLES IMPERVIOUS TO PRODUCT. CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH THIS MATERIAL. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

SEC 8 STORAGE AND SPECIAL INFORMATION

STORE IN A COOL, DRY, VENTILATED AREA. PROTECT AGAINST PHYSICAL DAMAGE. KEEP SEPARATE FROM ACIDS AND ORGANICS.

SEC 9 REGULATORY INFORMATION

DOT HAZARD CLASS:
CORROSIVE MATERIAL

DOT PLACARD REQUIRED:
CORROSIVE
UN 1791

DOT LABEL:
CORROSIVE

REGULATED UNDER THE FEDERAL INSECTICIDE FUNGICIDE AND RODENTICIDE ACT (FIFRA)
IF ANY SANITATION OR DISINFECTION CLAIMS ARE MADE ON LABEL

NFPA/HMIS RATINGS: HEALTH - 3; FLAMMABILITY - 0; REACTIVITY 0

REPORTABLE QUANTITY (RQ) (CWA/CERCLA): 100 LBS.

THE INFORMATION CONTAINED HEREIN IS PROVIDED IN GOOD FAITH AND IS BELIEVED TO BE CORRECT AS OF THE DATE HEREOF. HOWEVER, K.A. STEEL CHEMICALS MAKES NO REPRESENTATION AS TO THE COMPREHENSIVENESS OR ACCURACY OF THE INFORMATION. IT IS EXPECTED THAT INDIVIDUALS RECEIVING THE INFORMATION WILL EXERCISE THEIR INDEPENDENT JUDGEMENT IN DETERMINING ITS APPROPRIATENESS FOR A PARTICULAR PURPOSE. ACCORDINGLY, K.A. STEEL CHEMICALS WILL NOT BE RESPONSIBLE FOR DAMAGES OF ANY KIND RESULTING FROM THE USE OF OR RELIANCE UPON SUCH INFORMATION. NO REPRESENTATIONS, OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR TO THE PRODUCT TO WHICH THE INFORMATION REFERS.

1990

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

1990



PRODUCT

NALCO 8303 DISPERSANT

Emergency Telephone Number

Medical (800) 462-5378 (24 hours)

(800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 8303 DISPERSANT

DESCRIPTION: Aqueous solution of a modified acrylate/amide polymer, carboxylic phosphate, tolyltriazole, fatty acid salt and sodium hydroxide

NFPA 704M/HMIS RATING: 2/2 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Sodium hydroxide	1310-73-2	1-5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes irritation to skin and eyes. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield when handling. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Give water. Call a physician.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin



PRODUCT

NALCO 8303 DISPERSANT

Emergency Telephone Number

Medical (800) 462-5378 (24 hours)

(800) I-M-ALERT

SECTION 5 HEALTH EFFECTS INFORMATION

(- CONTINUED)

EYE CONTACT: Can cause severe irritation.
SKIN CONTACT: Can cause severe irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES: No toxicity studies have been conducted on this product.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR:	Clear to hazy golden	FORM:	Liquid	ODOR:	None
DENSITY:	9.4-9.7 lbs/gal.				
SOLUBILITY IN WATER:	Completely				
SPECIFIC GRAVITY:	1.13-1.17 @ 60 Degrees F			ASTM D-1298	
pH (NEAT) =	12.6-13.6			ASTM E-70	
FREEZE POINT:	19 Degrees F			ASTM D-1177	
FLASH POINT:	None (PMCC)			ASTM D-93	

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (PMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2, NOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.



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SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Wear impermeable gloves, boots, apron and a face shield with chemical splash goggles. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D002.

As a hazardous liquid waste, it must be solidified with stabilizing agents



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SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

(such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA: Results based on a similar product.

96 hour static acute LC50 to Bluegill Sunfish = Greater than 1,000 ppm

96 hour no observed effect concentration is estimated at 1,000 ppm based on no mortality or abnormal effects.

96 hour static acute LC50 to Rainbow Trout = 710 ppm

95% Confidence Limit of 96 hour LC50 = 500 - 1,000 ppm

96 hour no observed effect concentration is estimated at 125 ppm based on no mortality or abnormal effects.

OTHER STUDIES:

48 hour static acute median lethal concentration to Daphnia Magna = Greater than 1,000 ppm

48 hour no observed effect concentration is 1,000 ppm based on no mortality or abnormal effects.

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CODE -
(DEPENDENT UPON MODE, PACKAGE)
CONTAINS

CORROSIVE LIQUID, N.O.S.
8, UN 1760, PG III
- SODIUM TOLYLTRIAZOLE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

hazardous and the reason is shown below.

Sodium hydroxide - Corrosive

Sodium hydroxide = Ceiling 2 mg/m³ ACGIH/TLV

Sodium hydroxide = Ceiling 2 mg/m³ OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

This product contains sodium hydroxide, a Reportable Quantity (RQ) substance and if 33,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

U. S. DEPARTMENT OF AGRICULTURE (USDA):
USDA Inspection and Grading Programs - Food Safety and Inspection Service:
This product is authorized by USDA for use in federally inspected meat and poultry plants. Authorized use is under category G7.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/
formerly Sec. 307, 40 CFR 116/formerly Sec. 311:

This product contains the following ingredient covered by the Clean Water Act:

Sodium hydroxide - Section 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments),
Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

This product does not contain any chemicals which require warning under
California Proposition 65.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical
Materials Register.

STATE RIGHT TO KNOW LAWS:

The following ingredient(s) are disclosed for compliance with State Right To
Know Laws:

Carboxylate	Trade secret
Modified acrylate/amide polymer	Trade secret
Sodium hydroxide	1310-73-2
Sodium tolyltriazole	64665-57-2
Substituted carboxylate	Trade secret
Water	7732-18-5

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety
information. The product is to be used in applications consistent with
our product literature. Individuals handling this product should be
informed of the recommended safety precautions and should have access
to this information. For any other uses, exposures should be evaluated
so that appropriate handling practices and training programs can be



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SECTION 16 USER'S RESPONSIBILITY

(CONTINUED)

established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

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PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 02/09/94
DATE PRINTED: 06/06/94



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PRODUCT

NALCO A-Z-LITE 7356

Emergency Telephone Number

Medical (800) 462-5378 (24 hours)

(800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO A-Z-LITE 7356

DESCRIPTION: An aqueous solution of a zinc salt, a substituted carboxylic acid and phosphoric acid

NFPA 704M/HMIS RATING: 1/1 HEALTH 0/0 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Phosphoric acid	7664-38-2	5-10
Zinc chloride	7646-85-7	1-5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes irritation to skin and eyes. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin



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SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

EYE CONTACT: Can cause mild, short-lasting irritation.
SKIN CONTACT: Can cause mild, short-lasting irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES: Toxicity studies have been conducted on this product. The results are shown below.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 1.6/8.0 Minimally irritating

COMMENTS: Redness and swelling were noted immediately upon removal of the occlusive dressing. At 24 hours, three of the six rabbits still exhibited redness. This redness slowly subsided so that by day seven all rabbits had returned to normal.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 13/110.0 Minimally irritating

COMMENTS: No corneal opacity was noted at any scoring interval. Slight iritis was observed on days 1, 2 and 3 in two of six animals. This cleared by day seven. Moderate to severe conjunctival irritation was noted among all six rabbits. By day seven all but one rabbit had returned to normal.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR:	Clear colorless to light yellow	FORM:	Liquid	ODOR:	None
DENSITY:	9.2-9.4 lbs/gal.				
SOLUBILITY IN WATER:	Completely				
SPECIFIC GRAVITY:	1.10-1.13 @ 60 Degrees F			ASTM D-1298	
pH (NEAT) =	0.2-0.8			ASTM E-70	
VISCOSITY:	4 cps @ 60 Degrees F			ASTM D-2983	
FREEZE POINT:	20 Degrees F			ASTM D-1177	
BOILING POINT:	210 Degrees F @ 760 mm Hg			ASTM D-86	
FLASH POINT:	None (FMCC)			ASTM D-93	

NOTE: These physical properties are typical values for this product.